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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/519,727	03/03/2000	Kok-Wui Cheong	STFUP014	6703

7590 04/07/2004

CRAWFORD MAUNU
1270 NORTHLAND DRIVE SUITE390
ST PAUL, MN 55120

EXAMINER

CORRIELUS, JEAN B

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 04/07/2004

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/519,727

Applicant(s)

CHEONG ET AL.

Examiner

Jean B Corrielus

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-24 is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 11-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 11-16 are objected to because of the following informalities: claim 11, recites the steps of executing soft cancellation of the estimate or the expected value from a preceding calculation and calculating interference power to account for uncertainty of the estimate, however, there is no connection between each of such limitations and subsequent limitations recited in claims. Claims 12-16 are likewise objected to because of their dependency to claim 11. Appropriate correction is required.

Allowable Subject Matter

2. The indicated allowability of claims 2 and 7-10 is withdrawn in view of the newly discovered reference(s) to Hassan, US Patent 5,901,185 and Weinstein et al US patent No. 5,208,786. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Weinstein et al US patent No. 5,208,786.

Weinstein discloses a method and apparatus figs. 1 and 5, comprising the steps of receiving an input signals S1 and S2 that includes a primary data signal and a superimposed cross-talk signal; iteratively computing probable (estimate) crosstalk signal and therefrom producing a plurality of iteratively computed probable (estimate) crosstalk signals see abstract lines 7-9 and fig. 5; the data is calculated based on the iterative computed probable (estimate) cross talks converging toward the superimposed crosstalk signal see figs. 1 and 5, abstract.

As per claim 2, a probable desired signal estimated is computed and used to compute the probable (estimate) crosstalk see col. 1, lines 65-67.

5. Claims 7 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Hassan US patent No. 5,901,185.

Hassan discloses a method and apparatus comprising: receiving a symbol in line 505, fig. 5; obtaining an estimate of symbols in the symbol block (1000); iteratively calculating an expected value for each symbol in the symbol block and therefrom, producing a plurality of iteratively calculated expected values (1030) and selecting (decoding) symbol values based on the iteratively calculatively expected values converging toward final expected values for each symbol (760 of fig7).

As per claim 8, the step of calculating is executed soft cancellation of the expected value from the preceding calculation see fig. 10.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinstein in view of applicant's background of the invention.

Weinstein discloses the invention substantially as claimed by does not teach that the signal is a multicarrier signal such as discrete multitone. However, configure a system for processing a multicarrier signal such a DMT is old and well established in the art. For instance, Applicant 's background of the invention teaches at page 2, lines 4-6 the processing of a multicarrier signal. Given that fact it would have been obvious to one skill in the art to configure a system for processing a multicarrier signal such as DMT in order to facilitate transmission of information at higher rate over the twisted-pair phone lines.

As per claim 5, applicant's background of the invention further teaches that the HPNA is a well source of crosstalk. It would have been obvious to one skill in the art to use a HPNA device in order to take advantage of existing twisted pair wiring phone wiring for networking.

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As per claim 6, it would have been obvious to one skill in the art to configure the system in such a way to receive VDSL signal in order to carry high speed communication over the twisted pair phone lines.

8. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinstein in view of Shimizu et al US Patent No. 6,496,534.

As applied to claims 7 above, Weinstein teaches every feature of the claimed invention but does not explicitly teaches the further limitations of subtracting the estimate from the symbol block to produce an estimate of an interference free value of the input symbol in the symbol block. In the same field of endeavor, Shimizu teaches the further limitations of subtracting the estimate from the symbol block to produce an estimate of an interference free value of the input symbol in the symbol block using signal block 13. Given that, it would have been obvious to one skill in the art to incorporate such a teaching in Weinstein so as to improve signal detection.

Response to Arguments

9. Applicant's arguments with respect to claims 1 and 3-6 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

10. Claims 11-16 would be allowable if amended to overcome the objection sets forth above. /

11. Claims 17-21 are allowed.

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12. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

(for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is (703) 305-4023. The examiner can normally be reached on Monday-Thursday from 7:00 A.M. to 5:30 P.M.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3800.


Jean B. Corrielus

Primary Examiner

TC-2600 *4/1/04*